

We claim:

1. A nucleic acid isolated from a plant, which encodes a glycoprotein that is inducible by exposure of the plant to NPB.

2. The nucleic acid of claim 1, which is preferentially expressed in plant roots upon exposure of the plant to NPB.

3. The nucleic acid of claim 1, wherein the plant is selected from the group consisting of *Brassica napus* and *Arabidopsis thaliana* and is 3850-4150 nucleotides long.

4. The nucleic acid of claim 1, which has the restriction sites shown in Figure 4 for at least three enzymes.

5. The nucleic acid of claim 4, which encodes a glycoprotein having NPB ID NO:2.

6. The nucleic acid of claim 5, which is a cDNA comprising a region selected from the group consisting of SW 1271 and NPB2 ID NO:10.

7. A glycoprotein having NPB ID NO:2.

9. Antibodies immunologically specific for the protein of claim 7.

10. A gene expression cassette, which comprises a *plPAC* gene coding sequence operably linked to a promoter.

11. The expression cassette of claim 9, which comprises a *plPAC* gene from *Arabidopsis thaliana*.

12. The expression cassette of claim 10, in which the promoter is the cauliflower mosaic virus 35S promoter.

13. The expression cassette of claim 10, in which the *plPAC* gene is part of all of SEQ ID NO:1 or SEQ ID NO:10.

14. A vector comprising the expression cassette of claim 9.

15. The vector of claim 13, which is comprised of an *Agrobacterium* binary vector selected from the group consisting of pBIN19, pBIN1, and pBIN100.

16. A method for conferring a plant with enhanced resistance to xylem-inhabiting compounds by transforming *in vitro* the plant with the expression cassette of claim 9.

17. A method for conferring a plant with enhanced resistance

18. A method for conferring a plant with enhanced resistance

claim 15.

18. A representative unit from the transgenic plant of claim 17.

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19. A cell from the transgenic plant of claim 17.

20. A recombinant DNA molecule comprising the nucleic acid molecule of claim 1, operably linked to a vector for transforming cells.

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21. A cell transformed with the recombinant DNA molecule of claim 11.

22. The cell of claim 21, selected from the group consisting of bacterial cells, yeast cells and plant cells.

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23. A transgenic plant regenerated from the transformed cell of claim 22.

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24. A nucleic acid molecule of at least 20 nucleotides comprising a sequence selected from the group consisting of:

(a) SEQ ID NO:1; and

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(b) a sequence that is at least about 60% homologous to the sequence of SEQ ID NO:1 or SEQ ID NO:2.

having SEQ ID NO:1;

2. a sequence encoding an amino acid sequence that is at least about 40% identical to SEQ ID NO:2;

3. a sequence encoding an amino acid sequence that
5 is at least about 40% identical to SEQ ID NO:2;

4. a sequence encoding an amino acid sequence that is at least about 40% identical to residues 1-76, 613-669 or 1144-1161 of SEQ ID NO:1; and

5. a sequence hybridizing at moderate stringency
10 to a sequence encoding residues 1-76, 613-669 or 1144-1161 of SEQ ID NO:2.

15 25. A polypeptide produced by expression of the nucleic acid sequence of claim 24.

26. An antibody immunologically specific for the polypeptide of claim 24.

27. An oligonucleotide between about 10 and about
20 100 nucleotides in length, which specifically hybridizes at moderate stringency to a portion of the nucleic acid molecule of claim 1.

28. A recombinant DNA molecule comprising the
25 nucleic acid molecule of claim 24, operably linked to a vector for transformation of a cell.

1. The plant of claim 29, selected from the group consisting of bacterial cells, yeast cells and plant cells.

5 2. A transgenic plant regenerated from the cell of claim 1.

3. An intact plant p-glycoprotein, which is inducible upon exposure of the plant to NPPB.

10 4. The p-glycoprotein of claim 32, which confers upon a cell in which it is found resistance to Rhodamine 6G.

15 5. The p-glycoprotein of claim 33, which is preferentially produced in roots upon the exposure to the NPPB.

6. The p-glycoprotein of claim 34, from a plant selected from the group consisting of *Brassica napus* and *Arabidopsis thaliana*.

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7. The p-glycoprotein of claim 35, having an amino acid sequence that is selected from the group consisting of:

25 an amino acid sequence that is at least 80% similar to SEQ ID No. 1;

an amino acid sequence that is at least 70%

8. A method of

an amino acid sequence encoded by a nucleic acid sequence hybridizing with relative stringency to a amino acid sequence encoding residues 1-76, 613-669 or 1144-1161 of SEQ ID NO:2.

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37. Antibody immunologically specific for the p-glycoprotein of claim 36.

38. The antibodies of claim 36, that are immunologically specific to residues 1-76, 613-669 or 1144-1161 of SEQ ID NO:2.

39. A plant p-glycoprotein gene promoter which is inducible by NPPB.

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40. The plant p-glycoprotein gene promoter of claim 39, that is part of all of residues 1-3429 of SEQ ID NO:10.

20 41. A plant with reduced levels of *plPAC* protein.

42. The plant of claim 41, wherein the native *plPAC* gene is mutated.

25 43. The plant of claim 42, wherein the *plPAC* gene is mutated at the position of a T DNA.

44. A plant with reduced levels of *plPAC* protein.

g. The method of claim 44, wherein the population of plants is mutated by DNA insertion.